

CLAIM AMENDMENTS

(Amendments to PCT Amended Claims)

1. (Currently Amended) System comprising bar-elements (4,125,126) ~~joined or~~ joinable to form a truss (5), and connecting elements (1,14,21,34,38,52) ~~inserted or~~ insertable between these bar-elements (4,125,126) at ~~all such joint places, junctures~~ where two or more bar-elements ~~meet~~ whose longitudinal axes are not coaxial to each other are joined, whereby wherein

a) ~~the~~ each of said bar-elements (4,125,126) consists of at least one ~~segment~~ portion of a material selected from high-growing plants ~~each~~, and

b) ~~the~~ each of said connecting elements (1,14,21,34,38,52) consists of a selected rigid, regenerative material, and characterised in that wherein

c) at least one end of a bar-element (4,125,126), a connecting element (1,14,21,34,38,52) which is to be mounted to said bar-element, and/or ~~the~~ at least one end of a further bar-element (4,125,126) which is to be connected to said connecting element, are treated ~~such that they to~~ exhibit surfaces ~~running along well-defined~~ configured as geometrical bodies at least in selected areas,

d) such that at ~~the~~ a joint between ~~a~~ the bar-element (4,125,126) and ~~a~~ the connecting element or ~~a~~ the further bar-element (1,14,21,34,38;4,125,126), each of ~~both bodies~~ the elements (4,125,126;1,14,21,34,38,52) exhibits at least in a selected area a surface which runs along the surface (11;76) generated by a selected one of a cylinder, a cone, a prism ~~or~~ and a pyramid, as well as at least in another selected area a surface (11;75) which ~~runs along~~ is configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism ~~and/or~~ a hollow pyramid, respectively,

e) which surfaces permit an assembly by plugging together with closely adjoining surfaces which are complementary to each other and suitable for locking ~~by clamping and/or glueing like a fit~~ together.

2. (Currently Amended) System according to claim 1, ~~characterised in that~~ wherein the joint between ~~a~~ the bar-element (4,125,126) and ~~a~~ the connecting element or ~~a~~ the further bar-element (1,14,21,34,38;4,125,126) ~~is designed as~~ comprises a plug-connection (30).

3. (Currently Amended) System according to claim 1 ~~or 2~~,
~~characterised in that~~ wherein ~~that~~ the joint between a the
bar-element (4,125,126) and a the connecting element or a the
further bar-element (1,14,21,34,38;4,125,126) ~~is designed as~~
comprises a selected one of a clamping (21,34) ~~or~~ and a glueing
(1,14,38) connection.

4. (Currently Amended) System according to claim 3,
~~characterised in that~~ wherein for mounting a the bar-element
(4,125,126) by clamping, a core (23) ~~at~~ of the connecting
element or ~~at~~ the further bar-element (1,14,21,34,38;4,125,126)
is ~~designed to be~~ spreadable and therefore said core ~~can~~ is
adapted to be pressed against ~~the~~ an inside (76) of the
bar-element (4,125,126).

5. (Currently Amended) System according to claim 4,
~~characterised in that~~ wherein an element (31) widening conically
or like the frustum of a pyramid, is ~~pushed or pulled~~ moved into
an inner, ~~preferably~~ centric cut-out (13) of said core (23), for
spreading the core (23).

6. (Currently Amended) System according to claim 5, ~~characterised in that~~ wherein at least one of the connecting element ~~or~~ and the further bar-element (1,14,21,34,38;4,125,126) exhibits a cut-out (13) penetrating the core (23) in which ~~the~~ a shaft of a ~~screw (27), of a bolt or the like~~ fastener can be inserted to pull an element (31) with widening cross-section into the core (23).

7. (Currently Amended) System according to ~~one of the~~ ~~claims 4 to 6~~ ~~characterised in that~~ claim 1 wherein the connecting element (34) exhibits an annular shape (35), so that the cut-outs (13) for the insertion of a screw-like spreading element (27,31) can extend up to the inside (37) of the ring (35), in order to apply a threaded element or other clamping element at this location.

8. (Currently Amended) System according to ~~one of the~~ ~~previous claims,~~ ~~characterised in that~~ claim 1 wherein the connecting element (1,52) exhibits a discoidal shape, ~~e.g.~~ with a circular or ring-shaped, or a triangular, quadrilateral or hexagonal base (7,53).

9. (Currently Amended) System according to ~~one of the previous claims, characterised in that~~ claim 1 wherein one connecting element (1,14,21,34,38,52) exhibits at least one surface area of ~~concave shape, in particular~~ a shape which ~~approximately~~ generally corresponds to a part of ~~the~~ a lateral surface of a hollow cylinder, for connecting to the shaft of a bar-element (4,125,126).

10. (Currently Amended) System according to ~~one of the previous claims, characterised in that~~ claim 1, wherein at least one bar-element (4,125,126) exhibits a shaft milled to a round shape at its outer surface.

11. (Currently Amended) System according to ~~one of the previous claims, characterised in that~~ claim 1 wherein a bar-element (4,125,126), which is to be inserted between two connecting elements (1,14,21,34,38,52), exhibits a ~~principally similar structure at both of its ends, i.e. at both ends thereof~~ the surfaces (11;76) ~~running along~~ configured as a selected one of a cylinder, a cone, a prism ~~or~~ and a pyramid ~~are~~ arranged

either within or without, respectively, of the surfaces (11;75), which ~~run along~~ are configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism and/~~or~~ a hollow pyramid in a selected area.

12. (Currently Amended) System according to ~~one of the previous claims, characterised in that~~ claim 1 wherein a bar-element (4,125,126), which is to be inserted between two other bar-elements (4,125,126), exhibits a ~~principally~~ different structure at both of its ends, ~~i.e.~~ at one end the surface (11;76) ~~running along~~ being a selected one of a cylinder, a cone, a prism or a pyramid ~~is~~ arranged within the surface (11;75), which runs along a selected one of a hollow cylinder, a hollow cone, a hollow prism and/~~or~~ a hollow pyramid in a selected area, and at the other end ~~this is~~ arranged the other way round.

13. (Currently Amended) System according to ~~one of the previous claims, characterised in that~~ claim 12, wherein the bar-elements (4,125,126) consist of tubes.

14. (Currently Amended) Process to produce a truss (5) from bar-elements (4,125,126), which are to be joined, and from connecting elements (1,14,21,34,38,52), which are to be placed between ~~these~~ bar-elements at all such joint places, where two or more bar-elements meet whose longitudinal axes are not coaxial to each other, ~~whereby~~ wherein

a) the ~~rod-like~~ bar-elements (4,125,126) are made from at least one segment of a material from high-growing plants each, ~~as well as~~ and

b) the connecting elements (1,14,21,34,38,52) consist of a rigid, regenerative material,

~~characterised in that~~ wherein

c) at least one end of a bar-element (4,125,126), a connecting element (1,14,21,34,38,52) which is to be mounted to said bar-element, and/or the end of a further bar-element (4,125,126) which is to be connected, are treated such that they exhibit surfaces running along well-defined geometrical bodies at least in selected areas,

d) such that at the joint between a bar-element (4,125,126) and a connecting element or a further bar-element (1,14,21,34,38,4,125,126), each of both element bodies

(4,125,126;1,14,21,34,38,52) exhibits at least in a selected area a surface which runs along the surface (11;76) generated by a cylinder, cone, prism or a pyramid, as well as at least in another selected area a surface (11;75) which runs along a hollow cylinder, hollow cone, hollow prism and or hollow pyramid respectively,

e) and that surfaces (11;75) processed in such a way are assembled by plugging them together with closely adjoining surfaces which are complementary to each other and suitable for locking ~~by clamping and/or glueing like a fit~~ together.

15. (Currently Amended) Process according to claim 14, ~~characterised in that~~ wherein the bodies and/or the surfaces of the parts (4,125,126;1,14,21,34,38,52) which are to be connected are processed by ~~ablating, particularly by~~ cutting.

16. (Currently Amended) Process according to claim 14 ~~or~~ 15, ~~characterised in that~~ wherein both ends (73) of a bar-element (4,125,126) are processed ~~in such a way,~~ that the (longitudinal) symmetry axes of the processed areas (75;76) are in line with each other.

17. (Currently Amended) Process according to ~~one of the~~ claims ~~14 through 16~~, characterised in that wherein slots (24), ~~which are preferably~~ parallel to the longitudinal axis of the concerned plug-connection (3), are placed in an area, which adjoins the lateral surface (11) of a connecting element or a further bar-element (1,14,21,34,38,52;4), in order to facilitate a radial spring-like movement of ~~(areas 25 of)~~ the concerned generated surface (11).

18. (Currently Amended) Process according to claim 17, characterised in that wherein a spreading element (31) is inserted in a bore (13), which is parallel or coaxial to ~~the~~ a longitudinal axis of a plug-connection (3), in order to permit pressure ~~being~~ to be exerted in the direction of (areas 25 of) the generated surface (75) at the end of a bar-element (4) which is to be connected.

19. (Currently Amended) Process according to ~~one of the~~ claims ~~14 to 18~~, characterised in that wherein the bar-elements (4,125,126) are glued or clamped to the connecting elements or

further bar-elements (1,14,21,34,38,52;4,125,126) after plugging (30) ~~them~~ the elements together.

20. (Currently Amended) Process according to ~~one of the~~ claims 14 ~~to 19~~, ~~characterised in that~~ wherein connecting elements (38) are used as end pieces along ~~the~~ a longitudinal edge of the truss (5), which are connectable to a foundation (41), a ceiling, and a roof ~~or the like~~.

21. (Currently Amended) Process according to ~~one of the~~ claims 14 ~~to 20~~, ~~characterised in that~~ wherein a panelling ~~or the like~~ is attached at the connecting elements (1,14,21,34,38,52) of the truss (5).

22. (Currently Amended) Process according to ~~one of the~~ claims 14 ~~through 21~~, ~~characterised in that~~ wherein bamboo culms (4) are used as the bar-elements, whose inner and/or outer lateral surfaces (75,76) at the culms' ends (73) are processed.

23. (Currently Amended) Process according to claim 22, ~~characterised in that~~ wherein the lateral ~~surface(s)~~ surfaces

(75,76) of the end (73) of a bamboo culm are processed ~~in~~ such a way, that the wall-thickness of the culm (4) is equal to or less than a predetermined wall-thickness.

24. (Currently Amended) Process according to ~~one of the~~ claims 22 through 23, ~~characterised in that~~ wherein potentially present diaphragms (nodes) in the bamboo culm (4) are pierced or otherwise made passable ~~otherwise~~.

25. (Currently Amended) Process according to ~~one of the~~ claims 22 through 24, ~~characterised in that~~ wherein holes (13) are drilled into a connecting element (1,14,21,34,38,52), which lead into a surface area (12) covered by ~~the~~ a face-side of an attached bamboo culm (4), ~~in such a way,~~ that said holes join within the connecting element (1,14,21,34,38,52) in order to obtain a link between ~~the~~ cavities of the attached bamboo-culms (4).

26. (Currently Amended) Process according to claim 25, ~~characterised in that,~~ wherein during ~~the~~ creation of the lateral surfaces (75,76) at a connection-element which can be

plugged together with a bamboo culm (4), the cavity-joining holes (13) drilled into the connection-element (1,14,21,34,38,52) are used as a tool-guiding guide.

27. (Currently Amended) Apparatus to produce a truss (5) from bar-elements (4,125,126), which are to be joined, and from connecting elements (1,14,21,34,38,52), which are to be placed between the bar-elements at ~~all such~~ joint places, where two or more bar-elements meet whose longitudinal axes are not coaxial to each other, ~~by carrying out the process according to one of the claims 14 through 26, characterised by~~ wherein at least one tool (56,113) ~~designed as an ablating tool, in particular as comprising~~ a cutting tool, for machining at least one connecting element (1,14,21,34,38,52) made from a rigid, regenerative material and/or the ends (73) of bar-elements (4,125,126) made from at least one segment of a material from high-growing plants each, which are to be mounted to said connecting element or to one another, in such a way that they obtain surfaces (10,11;75,76) which run along well-defined geometrical bodies at least in selected areas, whereby at the processed body (4,125,126;1,14,21,34,38,52) in the area of ~~the~~ a joint of a

bar-element (4,125,126) with a connecting element (1,14,21,34,38) there is formed simultaneously a ~~surface which runs along the~~ lateral surface (11;76) configured as a selected one of a cylinder, a cone, a prism ~~or~~ and a pyramid at least in selected areas as well as a surface (11;75) ~~which runs along~~ configured as a selected one of a hollow cylinder, a hollow cone, a hollow prism and ~~or~~ a hollow pyramid at least in selected areas, respectively.

28. (Currently Amended) Apparatus according to claim 27, comprising at least one tool (113) for processing the ends (73) of a bar-element (4,125,126), ~~characterised by the tool comprising~~ a device (84) for clamping a bar-element (4,125,126) in such a way that both of its ends(73) are as substantially parallel respectively and concentrically as possible aligned to with a longitudinal axis of the processing apparatus (74).

29. (Currently Amended) Apparatus according to claim 28, ~~characterised by~~ wherein there is provided a device (108) at each end of the clamping device (84) for holding and/or mounting of a processing-tool (113).

30. (Currently Amended) Apparatus according to ~~one of the claims 27 through 29, characterised by~~ wherein there is provided a device (111) to guide the processing tools (113) or their holdings (108) respectively in ~~the~~ a feeding direction along the longitudinal axis of the processing apparatus (74).

31. (Currently Amended) Apparatus according to ~~one of the claims 27 through 30, characterised by~~ claim 28, wherein there is provided at least one cutting tool in the shape of a milling head (113) for machining ~~the~~ lateral surfaces (73) at the ends of the bar-elements (4,125,126), ~~which is designed to process the inner and the outer surfaces~~ (75,76) of a bar-element ~~(4,125,126), in particular a bamboo culm,~~ simultaneously.

32. (Currently Amended) Apparatus according to claim 27, and further comprising at least one tool (56) for machining a connecting element (1,14,21,34,38,52), ~~characterised by its design as a~~ wherein the tool (56) is adapted for rotating around an axis (57), with a cutting edge for creating a cavity (9) of rotational symmetry with defined cross-sectional area.

33. (Currently Amended) Apparatus according to claim 32, ~~characterised in that the~~ wherein a cutting region is arranged at a peripheral boundary surface (64) which surrounds a central guiding device (60).

34. (Currently Amended) Apparatus according to claim 33, ~~characterised in that~~ wherein the central guiding device (60) is ~~designed as~~ a drill, so that the guiding drill-hole (13) and the plugging cavity (9) can be produced in one work step.